

What is claimed is:

1. A recombinant vector comprising an AAV-1 P5 promoter having the sequence of nt 236 to 299 of SEQ ID NO: 1 or a functional fragment thereof.
2. A nucleic acid molecule encoding AAV-1 helper functions, said molecule comprising an AAV rep coding region and an AAV cap coding region, wherein said cap coding region comprises at least one member is selected from the group consisting of:
 - (a) vp1, nt 2223 to 4431 of SEQ ID NO: 1;
 - (b) vp2, nt 2634 to 4432 of SEQ ID NO: 1; and
 - (c) vp3, nt 2829 to 4432 of SEQ ID NO: 1.
3. A nucleic acid molecule encoding AAV-1 helper functions, said molecule comprising an AAV rep coding region and an AAV cap coding region, wherein said rep coding region comprises an AAV-1 rep coding region comprising at least one member selected from the group consisting of:
 - (a) rep 78, nt 335 to 2304 of SEQ ID NO: 1;
 - (b) rep 68, nt 335 to 2272 of SEQ ID NO: 1 or the cDNA corresponding thereto;
 - (c) rep 52, nt 1007 to 2304 of SEQ ID NO: 1; and
 - (d) rep 40, nt 1007 to 2272 of SEQ ID NO: 1 or the cDNA corresponding thereto.
4. A host cell stably transduced with an AAV-1 P5 promoter having the sequence of nt 236 to 299 of SEQ ID NO: 1.
5. A pharmaceutical composition comprising a carrier and a virus comprising the vector according to claim 1.

6. A method for AAV-mediated delivery of a transgene comprising the step of delivering to a host cell an AAV virion which comprises:

- (a) a capsid comprising at least one capsid protein encoded by an AAV-1 cap gene; and
- (b) a DNA molecule comprising a transgene under the control of regulatory sequences directing its expression.

7. A method for AAV-mediated delivery of a transgene to a host comprising the steps of:

- (a) assaying a sample from the host to determine the presence of neutralizing antibodies specific against any serotype of AAV; and
- (b) delivering to the host an AAV virion which comprises:
 - (i) a capsid comprising at least one capsid protein encoded by a cap gene of an AAV serotype against which the host has no antibodies as determined in step (a); and
 - (ii) a DNA molecule comprising a transgene under the control of regulatory sequences directing its expression.

8. The method according to claim 7, comprising the additional step of repeating steps (a) and (b).

9. The host cell transduced with a nucleic acid molecule according to claim 2.

10. The host cell transduced with a nucleic acid molecule according to claim 3.

11. A recombinant host cell transformed with a nucleic acid sequence expressing one or more AAV-1 rep proteins selected from among rep78 having the amino acid sequence of SEQ ID NO:7, rep 68 having the amino acid sequence of

SEQ ID NO:7, rep 52 having the amino acid sequence of SEQ ID NO:9, and rep 40 having the amino acid sequence of SEQ ID NO:11.

12. A recombinant host cell transformed with a nucleic acid sequence expressing one or more AAV-1 cap proteins selected from among vp1 having the amino acid sequence of SEQ ID NO:13, vp2 having the amino acid sequence of SEQ ID NO:15 and vp3 having the amino acid sequence of SEQ ID NO:17.

13. A method for transducing a muscle cell, said method comprising the step of infecting the cell with a recombinant AAV vector comprising an AAV1 capsid.

14. A method for transducing a liver cell, said method comprising the step of infecting the cell with a recombinant AAV vector comprising an AAV1 capsid.

15. A method of delivering a heterologous nucleic acid to at least one muscle cell in a mammalian subject, comprising:

(a) providing at least one recombinant adeno-associated virus (rAAV) virion, said rAAV virion comprising an AAV-1 capsid and a heterologous nucleic acid operably linked to expression control elements; and

(b) administering said rAAV virions to said muscle cell, whereby expression of said heterologous nucleic acid provides for a therapeutic effect.

16. The method of claim 15, wherein said heterologous nucleic acid is a gene encoding a protein.

17. The method of claim 15, wherein said heterologous nucleic acid is an antisense RNA.

18. The method of claim 17, wherein said protein is a secreted protein.

19. The method of claim 16, wherein said secreted protein is selected from the group consisting of cytokines, growth factors, and differentiation factors.

20. The method of claim 16, wherein said protein is alpha1-antitrypsin or erythropoietin.

21. The method of claim 15, wherein said administering of said rAAV virions is by way of direct injection to said muscle cell of said mammalian subject.

22. The method of claim 21, wherein said muscle cell is a skeletal muscle cell.

23. The method of claim 15, wherein said administering of said rAAV virions is by way of administration to a vascular conduit of said mammalian subject.

24. The method of claim 23, wherein said vascular conduit is a vein.